

*An Overview of  
Microsoft Research, China*

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Microsoft Research, China

## *Talk Outline*

- A Brief History of MSRC
- Environment in China
- MSRC Progress Report
  - Opening Ceremony, PR & Awareness
  - Government & University Relations
  - Facilities, Location
  - Recruiting Successes
  - Research Areas
  - People, Culture

## *Brief History of MSRC*

- Late 1997 -- Proposal for MSRC.
- July 1998 -- Kai-Fu Lee joins.
- September 1998 -- Beijing selected; actively planning.
- November 1998 -- Announced.
- June 1999 -- Initial research team on board.

## Why China?

- Market Potential
  - Largest software market in 10-15 years.
  - Unique technology challenges.
- Talent Pool
  - Fine universities rapidly improving.
  - Particular emphasis on education.
  - 1000 Ph.D.'s per year in CS-related areas.

## *Our Goal*

- **Mission**

- Build the best research lab in Asia.

- **Goals**

- Attract the best talent in China.
- Perform world class research
- Make significant impact to MS products
- Improve the image of MS in China

## *Environment - IT Industry*

- **Healthy PC business**
  - ⇒ 4M units, 25+% growth
- **Explosive Internet growth**
  - ⇒ 2M users
  - ⇒ but not e-commerce
- **Several local PC Stars**
  - ⇒ Legend, Founder overtake Compaq, IBM, etc.
- **Software industry small**
  - ⇒ due to 96% piracy

# Environment - Education

- Undergraduate

- Very competitive entry:
  - University rankings are not ambiguous;
  - <0.1% get into Tsinghua.
- Good, 4-year programs at 10+ universities.
- Solid, 5-year science & engineering programs at Tsinghua and USTC.
- "Planning" for Tsinghua and Beijing Univ to among best in the world.

- Graduate

- 3-year Master; 3 year Ph.D.
- 25-75% time spent on "horizontal projects", for survival.

# Environment - Education

- **Myths**

- Everybody goes to the US.
- BS > MS > Ph.D.

- **Where do Top B.S. & M.S. Students Go?**

- US (Particularly Tsinghua, Peking, USTC)
- Tsinghua (most schools)
- CAS (many schools, particularly USTC)
- Stay & do Ph.D. (Harbin, Zhejiang)
- Make \$ (Many schools, particularly ones in Shanghai)

- **Doesn't Everybody go to the US?**

- 1989 - 1993 : many top students (50%?) stay.
- 1993 - Date : many top students (>80%) leave.
- Future prediction : more will stay.



# *My Favorite Schools*

- Tsinghua  $\iff$  MIT
- Peking Univ  $\iff$  Harvard
- Harbin Institute of Technology  $\iff$  CMU
- USTC (& CAS)  $\iff$  Cal Tech
- Zhejiang  $\iff$  UW

## *Environment - Research*

- Chinese Academy of Sciences
  - Undergoing reform.
  - Keep 10% of researchers; give them 500+% increase in pay and funding.
- Microsoft viewed as a catalyst for this reform.
- (Not true!)

# Environment

## MSRC's Competition

- IBM
  - "Gift from Computer to King Zemin"
- Intel
  - "Runs international research FROM China"
- Lucent, Motorola
  - "Ph.D. Students are better developers"
- Chinese Academy of Sciences
- Local Companies -- Legend, Founder, Haier
  - "Unification of Sales, Development, and Research"

# Environment & Culture

- + Highly informed about world affairs
- + Very adaptive, entrepreneurial, resilient
- + Strong emphasis on education
- - Etiquette, Protocols, Bureaucracy
  - - "Student Distribution Office", "Training Fee", "Foreign Enterprise Student Quota", "Foreign Affairs Office", "Residence" (Hukou)
- Critical Success Factors
  - - Relationships (Guanxi)
  - - Positive image & perception → very easy to perpetuate a myth

# Environment

## Cultural Dilemmas

### Traditional Value

- Honor
- Nationalism
- Middle-of-the-Road
- Respect for Old

### New Belief

- Wealth
- Admiration for West
- Direct
- Admiration for Young

# Progress Report PR



# 儒雅谦和 名士风流

微软中国首席执行官李开复



## Progress Report PR



"Microsoft +  
China, this is an  
opportunity of a  
lifetime for me."

"Working with  
incredibly smart  
people on problems  
that will help billions  
- this is what makes  
MSR great."



# Progress Report PR

1. Introduction

2. Methods

3. Results

4. Discussion

5. Conclusion

6. Acknowledgements

7. References

8. Appendix

9. Glossary

10. Index

11. Bibliography

12. Appendix

13. Glossary

14. Index

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16. Appendix

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40. Appendix

Short Cuts  
to Gene-ius





# Progress Report PR

Ministry of Technology  
Zhu Lilan praises Microsoft  
for its far-sightedness, and  
its open research style.

The worrisome future  
of "nationalistic"  
software industry



# Progress Report PR

"I am pleased to see that at least there is one research institution that still encourages risk taking"

— China Computer World

"Microsoft will undoubtedly hire the best people from China. This should be a wake-up call that our nationalistic software industry may never see the light of the day."

— Beijing Youth Daily

"Dr. Lee says everyone of his employees is capable of finding a great job in the US. In that sense, Microsoft is actually retaining top talent for China."

— China News Daily

"Our young people are like 0's, and the world-class leaders in MSR, China are 1's. Without the 1 in front, the 0's amount to nothing."

— Beijing Youth Daily

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# Progress Report PR

## Other Efforts

- 5 TV shows, including one 30-minute show devoted to MERS.
- Monthly column by KFL.
- Newsletter.

## Very high awareness

- Already perceived as the most prestigious & desirable research lab.
- 1000 job applications.
- 1000 phone call inquiries.



## *Progress Report - Government*

- Ministry of Science & Technology
- Ministry of Information Industries
- Ministry of Education



Microsoft

## *Progress Report - Government*



**Visit From Zhou Guangzhan,  
Vice Chairman, People's Standing Congress,  
Former President, Chinese Academy of Sciences.**

# *Progress Report + University*

## **Programs**

- **Microsoft Fellowship**
- **Software Donation**
- **Internship & Visiting Scholar (from univ.)**
- **Visiting Professor (for MSRC researchers)**

## **Events**

- **Talks at Universities (MSRC & our guests)**
- **Lab visits**
- **Open house & dinner events**

# Progress Report - University Software Donation



"Next time, can  
you donate some  
software that we  
don't already  
have pirated  
versions of?"

- An anonymous  
professor.

# *Progress Report - University*

## *A Typical Talk At University*





# Progress Report - Relationships

## Lab Visit



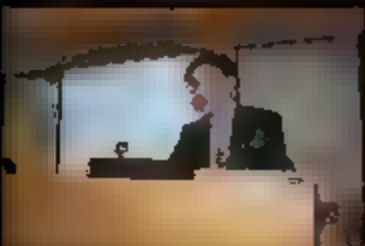
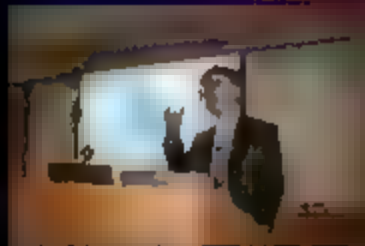
3/25/1999

Microspoil Corporation

# *Progress Report - University Open House*



# *Progress Report - University Open House*



# *Progress Report - University*

## *Dinner Event*



We are a happy family

# Location Lecture Room



## Lounge & Library



4/1/99

## People



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# People



4/7/1999



# People



## Recruiting Report

	China	Abroad	#Applicant
Sr. Researcher / Res. Mgr	1	5	20
Researchers	3	3	100
Associate Researchers	27	0	500
Interns	35	5	N/A
Developers / IT	7		400

## *Progress Report - Recruiting*

- **Yu-Qin Zhang, Senior Researcher**

- Youngest IEEE Fellow ever (age 31).

- Director of Multimedia at Sarnoff.

- USTC Prodigy Class at age 12.

- **Chang-Ning Huang, Senior Researcher**

- Most famous Chinese researcher in NLP.

- Professor at Tsinghua University.

- Only person ever invited from China to give plenary invited talk at

- COLING.

- **Harry Shum, Research Manager**

- Transfer from Redmond.

- Visual Perception Team, to extend work on Concentric Moons.

- Southeast University Prodigy Class at age 13.

## *Progress Report - Recruiting*

- **Hongjiang Zhang, Research Manager**

Manager of video technologies at HP Lab.  
Pioneer in video analysis, browsing, retrieval.

- **Jin Li, Researcher**

MTS, Sharp Labs. Active participant in JPEG2000.  
Regarded by Tsinghua professors as "best EE student ever graduated"  
Respected by Deng Xiaoping as exemplary engineering talent.

- **Shipeng Li, Researcher**

MTS, Sarnoff Labs. Active contributor to MPEG-4.  
Recipient of two "Gao Muorui" Award at USTC - only one in history.

## *Progress Report - Recruiting*

- **Yike Guo, Researcher**  
Technical Director, Imperial College Distributed Computer Lab
- **Jiang Li, Researcher**  
Only person to win every Best Paper Award at ChinaGraph
- **Wenyin Liu, Researcher**  
Winner of IEEE Competition on graphic drawing recognition
- **[Name Withheld], Researcher**  
#1 expert in Asian language handwriting recognition

## *Associate Researchers*

- Why?
  - Chinese Ph.D. only 3 years (often < 1 yr on thesis)
- Goals
  - Adds “flow of talent” to MSR.
  - Extended trial period.
  - Train more research talent for China.
  - Hope to become “official” post-doc program.

# *Hiring process for Associate Researchers*

- (1) Applications (500)
- (2) Resume Screen (250)
- (3) Written Test (150)
- (4) Phone Screen (125)
- (5) Interview (27)

Admin

Elaine Chen

Jennifer Zhang

Jessica Zhang

Microsoft Research, China

KaiFu Lee

Ye-Qin Zhang

People

Natural Language

Changqing Huang

Dongfang Cai

Ting Liu

Hailiang Wang

Endong Xun

Internet Mining

YiShi Guo

Jingong Wan?

Search

Memberships

Mingming Li

Shao Di

Zhang Chen

Huang Chao

Zhou Jianhui

Jiaofeng Gao

Multi-Media I/I

Jian Wang (Vib)

Gao Zhang

Jian Han

Jialin Chen?

Multi-media

Ye-Qin Zhang

Hongliang Zhang

Jin Li

Shijiang Li

Hao Jiang

Huiming Shao

Hongwu Wang

Yulong Yang

Kai Yan

Qi Wei

Qian Zhang

Xiangrong Chen

Visual Recognition

Henry Shum

Jiang Li

Wanglin Liu

Yingying Xu

Yanjuan Xu

Lidong Wang

Mingming Wu

Xin Tong

Lab W. II

Xiaoqing Ling

Frank Yang

Gouqian Chen

Menghui Sun

Yanfeng Sun

Wenhong Zou

Jingang Hou

Yan Li

Chunhui Hu

Recognition /

Communication

Shoulin Shang

University

Ruihong

Rongjin Zou



## *Our Technical Advisory Board*

- **Yunhe Pan**

- President, Zhejiang University
- Member, Academy of Engineering

- **Ba Zhang**

- Professor, Tsinghua University
- Member, Academy of Engineering

- **Huisheng Chi**

- Executive VP, Beijing University

- **Victor Zue**

- Associate Director, Laboratory of Computer Science  
Microsoft Corporation

## *Our Technical Advisory Board*



# Research Areas

## ■ Chinese information processing

- Chinese NLP

- Utilize all Internet data for:

- data mining / enrichment / search, particularly for Chinese & cross-language.

- Active language model for recognition.

## ■ Multimodal user interface

- Speech, handwriting, vision, biometrics.

- First applied to Asian languages.

## ■ Multimedia

- Fusion of vision, video, graphics, communications.

- Coding, communication, retrieval of MM (taking advantage of MPEG4 and MPEG7)

# Chinese Multimodal Input

- User studies to guide design of multi-modal interaction
- Continuous iterations of studies & design

	English Keyboard	Chinese P-Input	Chinese Mouse	Chinese Speech	Chinese Handwriting
First-Time User Speed	★★		★★	★★	★★
Speed After Learning Curve	★★	★★★	★	★★	★
Low cognitive load (e.g. short 'Thank you')	★★	★★★	★	★	★
Not too soon (can't forget)	★★		★★	★★	★★

# Multimodal Chinese Input Project

## ■ Usability / Ergonomic Study

- 2 Pinyin systems, 2 handwriting systems, 2 speech recognition systems.
- Compare system performance against each other, and against natural writing / speaking.
- Output can also include a usability guide.

## ■ Design of a multimodal prototype

- Likely to be flat-panel configuration.
- Details will depend on usability study.

## MSRC Culture



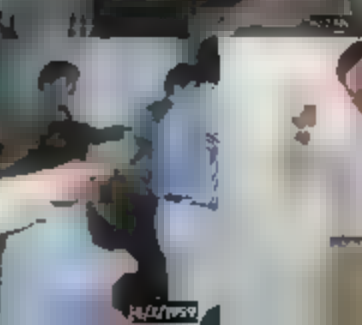
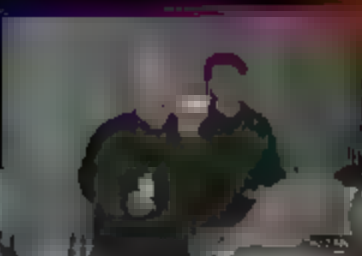
# *Chinese New Year Party*

## *(all of MS China)*



Corporation

# MSRC Culture





# *Just For Fun*

My First April Fool's Day in China





*Just For Fun*



**My First Birthday  
In China**



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More Birthdays....

*Just For Fun*



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## *Just For Fun*

What to do if you run out of whiteboard space....

